North Carolina Department of Transportation

Building a System Safety Program Plan

Public Transportation Division

Overview

The System Safety Program Plan

- Uses System Safety Program Plan (SSPP) model taken from FTA, APTA rail and bus industries' programs
- Will provide framework for new safety programs
- Will provide model plan to compare with existing plans and help to fill in gaps

Overview

The System Safety Program Plan

- Is a PLAN, not a fully functioning program
- Will document what you have done
- Will give guidance for choosing sample policies, procedures and forms from the Resource Manual to use where needed

SSPP Timeline

- **February 2004**
  - **System Safety Program Plan (SSPP) workshops held**
- **April 3, 2004**
  - **First draft of SSPP due from Community Transportation Systems**
- **May 7, 2004**
  - **SSPP Revisions due back to grantees**
- **June 4, 2004:**
  - **Final SSPP drafts due from grantees**
- **June 30, 2004:**
  - **Final SSPP drafts approved by NCDOT/PTD**

Brief History

- **Resolution requiring approved System Safety Program Plan from Community Transportation systems passed by North Carolina Board of Transportation in September 2002**

- **Facilitated discussion group held at 2002 Community Transportation conference to determine content of safety program training which led to development of resource manual**

Brief History

- **Memorandum of Understanding (MOU) is signed December 16, 2003;**
  - **MOU describes the Federal Transit Administration Model Transit Bus Safety and Security Program**
  - **Model Transit Bus Safety and Security Program was developed in response to National Transportation Safety Board (NTSB) recommendations**

Brief History, continued

- **Memorandum of Understanding (MOU), continued**
  - **Agreement is between Federal Transit Administration (FTA), American Association of State Highway and Transportation Officials (AASHTO), American Public Transportation Association (APTA), and Community Transportation Association of America (CTAA)**
  - **Agreement defines the Program, and the how it will be implemented at Federal, State and Local levels**

Questions?

Description of the SSPP Elements

- **Original Elements were taken from military standards and adapted to transit industry**
  - **Elements are used in both rail and non-rail transit**
  - **Some elements are more applicable to rural transit than others**
  - **Each system will need to determine which elements to include**
  - **“Core Elements” must be included in all system plans**

Description of the SSPP Elements

- **Core Elements are:**
  - **Driver/Employee Selection**
  - **Driver/Employee Training**
  - **Drug and Alcohol Abuse Programs**
  - **Vehicle Maintenance**
  - **Safety Data Acquisition/Analysis**
  - **Security**

Choosing and Describing the Elements

- **Things to Consider**
  - **Size and complexity of the system**
    - **Number of employees and vehicles**
    - **Coverage area**
    - **Number of administrative, dispatch, maintenance and passenger pick up and drop off facilities**
    - **Type(s) of service provided**

Choosing and Describing the Elements

- **Things to Consider**
  - **Frequency and number of changes to the system expected during the next 1-3 years**
    - **Service or vehicle additions or changes**
    - **New, renovated or modified facilities projects**
    - **Changes in workforce (i.e., immigrant populations, hires from other industries)**

Choosing and Describing the Elements

- Things to Consider
  - Incident/accident history
    - Increase/decrease in number or severity
    - Type(s) of incidents
  - Passenger/Customer complaints or concerns
    - Increase/decrease in number or severity
    - Change in customer needs
  - Other?

Choosing and Describing the Elements

- **Remember, this is a PLAN, not a complete program; choose elements that you believe will improve your system's safety.**
- **Implementing specific elements will require policies and procedures**
- **You have already addressed some of the elements, the plan is a way to organize and document them**

Choosing and Describing the Elements

- **Identify the elements for which you already have description(s), policies, procedures and documentation**
  - **System Description-Community Transportation Program Grant**
  - **Drug and Alcohol Abuse Program-existing Drug/Alcohol Testing policies**
  - **Others?**

Choosing and Describing the Elements

- **Identify the elements for which you need supporting policies, procedures, etc.**
  - **Write a description of what the element should include**
  - **Identify the policies and procedures needed**
  - **Review the Resource Manual for potential sample policies and procedures**

Choosing and Describing the Elements

- **Contact the Driver Education Representative for your area for additional sources of information which may include**
  - **Other states' safety programs**
  - **Web based resources from other states and industry associations**
  - **Publications from Federal Transit Administration and other federal agencies**

Element by Element Description

- **General Safety Plan Management**
  - **Policy statement-establishes the SSPP as an operating document**
    - **Should be from governing board and manager and clearly state the authority for the SSPP**
    - **Should clearly delegate the authority and accountability for the plan through the entire organization**

Element by Element Description

- **General Safety Plan Management**
  - **Goals-Each system needs clearly stated goal(s) for its SSPP**
    - **Goals should be long term**
    - **Goals should be meaningful**
    - **Goals should be realizable**

Element by Element Description

- **General Safety Plan Management , continued**
  - **Objectives-Must support goals, must be quantifiable and attainable**
    - **Usually implemented through policies**
    - **Policies must be assessable**

Element by Element Description

- **General Safety Plan Management**
  - **System Description and Organizational Structure**
  - **May use the description section of the Fiscal Year 2004-05 Community Transportation Program Grant as an example of a system description**

Element by Element Description

- **Plan Control and Update Procedures-tells how and when the plan is reviewed and updated**
  - **may be by frequency**
  - **may be by demand (change in system, accident history)**

Element by Element Description

- **Hazard Identification and Resolution Process- describes how system hazards will be identified, analyzed and resolved and includes:**
  - **Hazard Identification**
  - **Hazard Categorization**
  - **Hazard Resolution**

More about this…

Hazard Identification and Resolution

- **Hazard Identification and Resolution: A process for identifying and resolving (not necessarily eliminating) hazards by doing the following:**
  - **Identify the Hazards**
  - **Categorize the Hazards**
  - **Resolve the Hazards**

Hazard Identification and Resolution

- **Identify the Hazards**
  - **How can we identify hazards?**
  - **Who can help us?**
  - **What data can we use?**

Hazard Identification and Resolution

- **How can we identify hazards?**
  - **Personal Observation**
  - **Safety Committee/Employee Input**
  - **Customer Suggestions and Complaints**
  - **Incident/Accident reports**
  - **Public Safety/Occupational Safety reviews**
  - **Others?**

Hazard Identification and Resolution

- **Categorize the Hazards**
  - **There are many ways to categorize hazards**
  - **The most important thing to remember is that there needs to be some sort of process**
  - **Part of the process needs to be a way for determining exceptions**

Hazard Identification and Resolution

- **Categorize the Hazards, continued**

  Hazard Severity-What's the worst thing that will happen?

  - **Catastrophic-Death or System Loss (often called a Category I)**
  - **Critical-Severe injury, severe occupational illness, or major system damage (often called a Category II)**

Hazard Identification and Resolution

- **Categorize the Hazards, continued**
  - **Hazard Severity-What's the worst thing that will happen?**
    - **Marginal-Minor injury, minor occupational illness, or minor system damage (often called a Category III)**
    - **Negligible-less than minor injury, occupational illness, or system damage (often called a Category IV)**

Hazard Identification and Resolution

- **Categorize the Hazards, continued**
  - **Hazard Probability-How often will it happen?**
    - **Frequent-likely to occur frequently (individual); Continuously experienced (fleet/inventory); category “A”**
    - **Probable-Will occur several times in life of an item; will occur frequently in fleet/inventory; category “B”**

Hazard Identification and Resolution

- **Categorize the Hazards, continued**
  - **Hazard Probability-How often will it happen?**
    - **Occasional-Likely to occur sometime in the life of an item; will occur several times in fleet/inventory; category "C"**
    - **Remote-Unlikely but possible to occur in life of an item; unlikely but can be expected to occur in fleet/inventory; category "D"**
    - **Improbable-So unlikely, it can be assumed occurrence may not be experienced; unlikely to occur, but possible in fleet; category "E"**

Hazard Identification and Resolution

Using a matrix can help with this process. The matrix shown on the next slide and the accompanying explanation in the Resource Manual is a simplified version that you can use to categorize hazards that occur in your system.

HAZARD ASSESSMENT M ATRIX

Frequency of Occurrence	Hazard Categories	
	Critical I	Marginal II
A Frequent	**I A**	**II A**
B Remote	**I B**	**II B**

Hazard Risk Index

I A	Unacceptable or Undesirable (Management Decision Necessary)
II A, I B	Acceptable with Management Review
II B	Acceptable without Management Review

Hazard Identification and Resolution

- **Categorize the Hazards, continued**
  - **There are various ways to categorize hazards; consult the following resources for other examples:**
    - **NCDOT/PTD Safety Resource Manual**
    - **County Risk Manager**
    - **Insurance Carrier**
    - **Public Safety Departments**

Hazard Identification and Resolution

- **Resolve the Hazards**
  - **"Resolving" does not mean "Eliminating"**
  - **In Community Transportation service, some hazards are impossible to eliminate; others are highly impractical to eliminate**
  - **Reducing risk to the lowest practical level can be done in a variety of ways, from protective and warning devices to special procedures**

Hazard Identification and Resolution

- **Resolve the Hazards**
  - **Some hazards that present unacceptable risk because of severity and high probability must be eliminated**
  - **Part of the Hazard Resolution procedure should be a predetermined process that says which identified hazards are acceptable, acceptable with improvement, or unacceptable.**

Hazard Identification and Resolution

- **Resolve the Hazards, continued**
  - **Procedures for reducing "unacceptable" and "undesirable" must be spelled out:**
    - **Use of Personal Protective Equipment**
    - **Warning Devices**
    - **Training of Personnel**
  - **All staff should be involved and informed, since the end result of the Hazard Identification and Resolution process means that certain risks will be accepted as part of the ongoing operation**

Questions?

Element by Element Description

- **Accident/Incident Reporting and Investigation**
  - **Linked to Hazard Identification, must have the following:**
    - **Criteria (which incidents will be investigated)**
    - **Procedures (how investigation will be performed)**
    - **Internal Notification (who is notified of what, everyone must understand this)**

Element by Element Description

- **Accident/Incident Reporting and Investigation**
  - **Linked to Hazard Identification, must have the following:**
    - **Reporting (type, format, distribution, findings, conclusions, recommendations)**
    - **Follow Up (recommendations tracked, preventive measures taken)**
    - **Documentation (standard format for every occurrence)**
    - **External Notification (preparation and submission of reports to local, state and federal agencies)**

Incident

- **An unforeseen event or occurrence that does not necessarily result in death, injury, contact, or property damage.**

Element by Element Description

- **Facilities Inspections-also linked to Hazard Identification**
  - **Lists facility equipment to be inspected (ex.: fire extinguishers)**
  - **Includes schedule of inspections**
  - **Includes requirements for reporting hazards that are found during the inspections**

Element by Element Description

- **Maintenance Audits/Inspections**
  - **Reference maintenance plans and procedures**
  - **Use maintenance documentation**
  - **Insure that all required maintenance is performed as scheduled, and includes...**

Element by Element Description

- **Vehicle Maintenance**
  - **Must guarantee that no unsafe vehicles are dispatched for service**
    - **Focuses on safety**
    - **Requires regular, scheduled attention to maintenance by all employees**

Element by Element Description

- **Rules/Procedures Review**
  - **Documented method for review and revision of system rules/procedures for accuracy and relevance to the operations; this covers not only safety, but also operating rules and procedures as well as vehicle maintenance procedures**

Element by Element Description

- **Rules/Procedures Review**
  - **Address the rules/procedure and revision process**
    - **When are Rules or Procedures needed?**
    - **When/how often are they reviewed?**
      - **On a schedule; annually, biennially (State and Federal Compliance review)**
      - **On demand, for example due to change in system, or due to major incident, emergency or other occurrence**

Element by Element Description

- **Rules/Procedures Review**
  - **Ensure that rules and procedures are carefully developed, maintained and followed**
    - **Establish a process (check list) for developing new rules and procedures**
      - **What groups are affected (passengers, employees, customer agencies)?**
      - **What laws, regulations apply to the situation?**

Element by Element Description

- **Rules/Procedures Review**
  - **Ensure that rules and procedures are carefully developed, maintained and followed**
    - **Establish a group of individuals to review rules and procedures**
      - **May include employees, legal, risk management, county administration, public safety, emergency management, customers or other personnel with expertise**
      - **May include transit industry peers**

Element by Element Description

- **Rules/Procedures Review**
  - **Ensure that rules and procedures are carefully developed, maintained and followed**
  - **Do the same for maintenance rules and procedures**

Element by Element Description

- **Training and Certification Review/Audit**
  - **SSPP should require that all necessary training is conducted and include:**
    - **Driver/Employee Selection-a clear definition of qualifications and background for both paid and volunteer employees that are safety critical**
      - **Use background checks for both paid and volunteer employees**
      - **Perform criminal record and driving record checks for all safety critical positions**

Element by Element Description

- **Training and Certification Review/Audit**
  - **SSPP should require that all necessary training is conducted and include:**
    - **Driver/Employee Training-insures that initial and on-going training is completed**
      - **Establish performance requirements for new hires and current employees**
      - **Write training plan, including specific content, to address what new and current employees must complete to maintain employment**
      - **Address initial training as well as refresher and remedial training**

Element by Element Description

- **Training and Certification Review/Audit**
  - **SSPP should require that all necessary training is conducted and include:**
    - **Fitness for duty-including fatigue awareness and use of over-the-counter drugs**

Element by Element Description

- **Emergency Response Planning, Coordination and Training**
  - **describes how the agency carries out emergency response planning, including procedures, training, drills and coordination with other agencies**

Element by Element Description

- **Emergency Response Planning, Coordination and Training**
  - **Should include all emergency procedures for all employees**
  - **Should include all training that employees require to stay current with procedures**
  - **Should include all Memoranda of Understanding (MOU) with other agencies**

Element by Element Description

- System Modification Design Review and Approval Process-usually associated with capital equipment acquisition; requires that any changes in the system be reviewed for possible hazards, and proper measures taken to eliminate or mitigate them; avoids use of exceptions or “work-arounds” (cutting corners)

Element by Element Description

- System Modification Design Review and Approval Process
  - Should be done whenever equipment or procedures are changed, preferably before changes are made
  - Hazard Assessment should be performed
  - Final changes in equipment and operating procedures should be documented, and the information used for future training and risk management

Element by Element Description

- **Safety Data Acquisition/Analysis**
  - **Details the type of data, frequency of collection and how it will be used**
  - **Linked to Hazard Resolution, since data from incidents and accidents can be used to discover hazards throughout the operation**

Element by Element Description

- **Safety Data Acquisition/Analysis**
  - **Should be used to look for trends over time**
  - **Can be used for comparison with other systems**
  - **Can be used to measure the system's performance against itself over time**

Element by Element Description

- **Interdepartmental/interagency coordination**
  - **Shows lines of communication with other agencies, particularly Emergency Response Agencies**
    - **Should include sharing of information through formal and informal channels**
    - **Should include mechanisms such as drills, training and exercises**

Element by Element Description

- **Interdepartmental/interagency coordination**
  - **Should be in the form of formal agreements or procedures where specific roles or tasks need to be accomplished, such as emergency response**
    - **Often in the form of Memorandum of Understanding (MOU)**
    - **Can be used for routine shared in-kind services as well as emergency response situations**

Element by Element Description

- **Configuration Management**
  - **Process by which all property, equipment and systems design are documented**
  - **Most important when buying new equipment or modifying existing equipment to document safety needs or concerns**
    - **Typically used in new facility projects or to track changes in facility renovation that could affect safety**

Element by Element Description

- **Configuration Management**
  - **Coordinated or combined with System Modification Review and Approval Process**
    - **May be applied to vehicles if changes are made to the entire fleet**

Element by Element Description

- **Employee Safety Program**
  - **Includes OSHA requirements, right to know requirements, and any other employee safety policies**
  - **Often included in agency wide safety program**

Element by Element Description

- **Hazardous Materials Programs**
  - **Covers any hazardous materials that the system handles or generates**
  - **All applicable federal, state and local laws and regulations must be addressed**
  - **Image of the public transportation industry as "friend of the environment" should be considered, if the system generates hazardous materials**

Element by Element Description

- **Drug and Alcohol Abuse Programs**
  - **All systems must comply with the Drug and Alcohol Testing Requirements**
  - **SSPP only needs to refer to current system policy and program**

Element by Element Description

- **Contractor Safety Coordination**
  - **All safety requirements and sanctions for non-compliance must be documented in the executed contract either specifically or by reference**
  - **Contractor is responsible for implementation, while grantee is responsible for monitoring performance**

Element by Element Description

- **Contractor Safety Coordination**
  - **Grantee is responsible for clearly explaining requirements through whatever means (manuals, training, etc.)**
  - **Contractor is responsible for all employees knowing and following the system's safety policies and procedures**

Element by Element Description

- **Procurement**
  - **Spells out what steps are taken to make sure that unauthorized hazardous materials, supplies, and defective or deficient parts are not purchased and used by the system**
  - **Usually references the procurement or purchasing policy**

Element by Element Description

- **Vehicle acquisition**
  - **As above, insures that vehicles that are purchased are appropriate for the intended use**
  - **Insures that all federal, state and local safety laws and regulations are met by the manufacturer and vendor at the time of vehicle purchase**

Element by Element Description

- **Alternative Fuels and Safety**
  - **Identifies all hazards associated with alternative fuel storage, transport, maintenance and fueling**
  - **Insures that facilities and vehicles are modified for safe, long term operation;**
  - **Includes documentation of procedures, training, maintenance, specifications and applicable regulations**

Element by Element Description

- **Operating Environment and Passenger Facility Management**
  - **Addresses safety of passenger use areas, such as bus stops, shelters, waiting areas and the like**
  - **Criteria for locating and equipping customer areas should be developed, including maintenance plans and security**

Element by Element Description

- **Security**
  - **Should define the security role of each employee**
    - **Should include rules, procedures, and training for all employees**
  - **Details any and all actions in support of system security goals and objectives, which should be included in a system security plan**

Element by Element Description

- **Security**
  - **Establishes milestones for implementing system security**
  - **Includes how the system will work with law enforcement and other public safety agencies,**
    - **Often included in interdepartmental/interagency cooperation element**
    - **References any formal agreements with law enforcement agencies**

Element by Element Description

- **Internal Safety Audit Process**
  - **This is a review that insures that all safety elements are being implemented as intended**
  - **Insures that all safety related policies and procedures are being followed as intended**
    - **Should be done on a predetermined schedule**
    - **Should address actual performance**

Next Steps

- Safety Program audit questions will be added to the biennial State/Federal compliance questionnaire
- Driver Education Representatives will make site visits to address special needs and to review SSPP implementation progress
- Additional training will be provided to address specific needs

Questions?